

FUKIEN SECONDARY SCHOOL
S4 First Term Examination (2020-2021)
Geography
(1 hour 45 minutes)

Date: 8th January 2021

Name: _____

Time: 10:30 a.m. - 12:15 p.m.

Class: _____ No.: _____

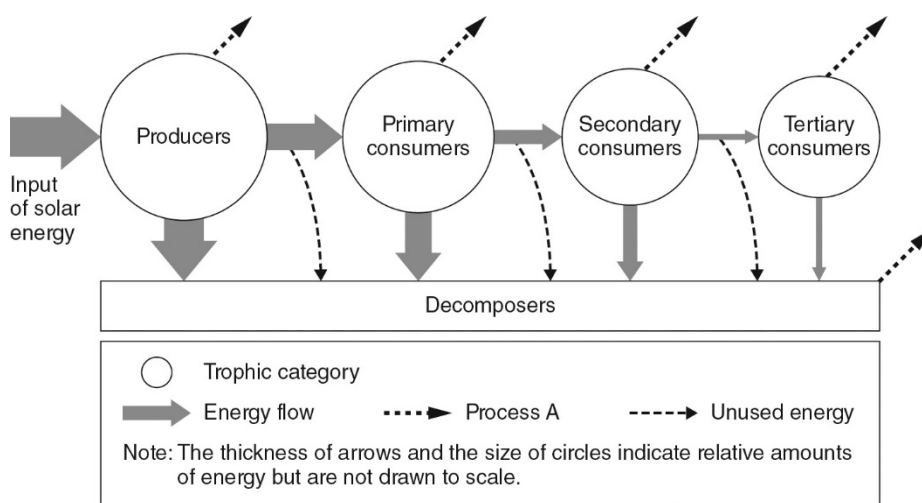
Instructions to Candidates:

1. The full mark of this paper is 60.
2. Answer **ALL** questions.
3. Write all answers on the single-lined paper provided.
4. Hand in both the question paper and the single-lined paper at the end of the examination.

I. Multiple Choice Questions (12 marks)

Choose the best options and write the correct answers on the single-lined paper.

1. The figure below shows the energy flow in a rainforest ecosystem. Which of the following are the correct descriptions of the figure?



- (1) At each trophic level, energy is absorbed and lost.
 - (2) As trophic level rises, less energy remains.
 - (3) Process A takes place in form of respiration and excretion.
- A. (1) and (2) only
B. (1) and (3) only
C. (2) and (3) only
D. (1), (2) and (3)

2. Which of the following descriptions about the Amazon Basin are correct?

- (1) It has the largest areas of tropical rainforest in the world.
- (2) It suffers the largest loss of tropical rainforest among the major tropical rainforest areas.
- (3) The 'fish-bone' pattern in the basin suggests that the rainforest has been cleared along roads.

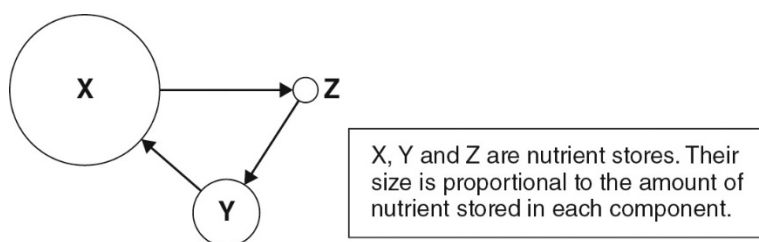
- A. (1) and (2) only
- B. (1) and (3) only
- C. (2) and (3) only
- D. (1), (2) and (3)

3. Which of the following explain(s) the dense vegetation in tropical rainforests?

- (1) Fertile soil
- (2) Hot and wet climate
- (3) Plentiful sunlight inside the forest

- A. (1) only
- B. (2) only
- C. (1) and (3) only
- D. (2) and (3) only

4. The figure below shows the nutrient cycle in tropical rainforests. Which of the following explain the size of each store as shown in the figure?



- (1) Store X: Hot and humid climate
- (2) Store Y: Intense leaching and rapid plant absorption
- (3) Store Z: Rapid decomposition and serious leaching

- A. (1) and (2) only
- B. (1) and (3) only
- C. (2) and (3) only
- D. (1), (2) and (3)

5. Which of the following descriptions about the vegetation in tropical rainforests are correct?

- (1) The vegetation is evergreen.
- (2) The emergents have umbrella-shaped crowns.
- (3) Lianas climb up a tree trunk to obtain physical support.

- A. (1) and (2) only
- B. (1) and (3) only
- C. (2) and (3) only
- D. (1), (2) and (3)

6. The photo below shows plant X in tropical rainforests. Which of the following statements about this plant are correct?



- (1) It starts its life as an epiphyte.
- (2) It absorbs nutrients from the host plant.
- (3) It will eventually kill the host plant.

- A. (1) and (2) only
- B. (1) and (3) only
- C. (2) and (3) only
- D. (1), (2) and (3)

7. How do plants in tropical rainforests compete for sunlight?

(1) Leaves with waxy surfaces and drip-tips

(2) Crowns with umbrella shape

(3) Climb along other plants

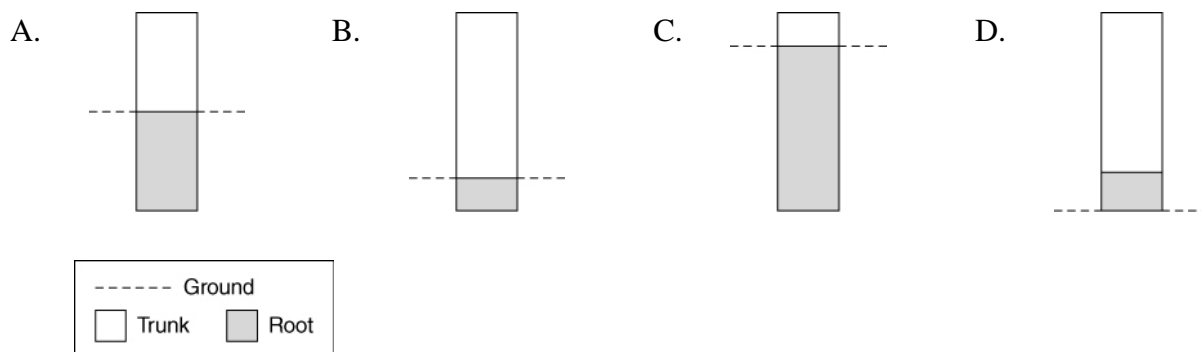
A. (1) and (2) only

B. (1) and (3) only

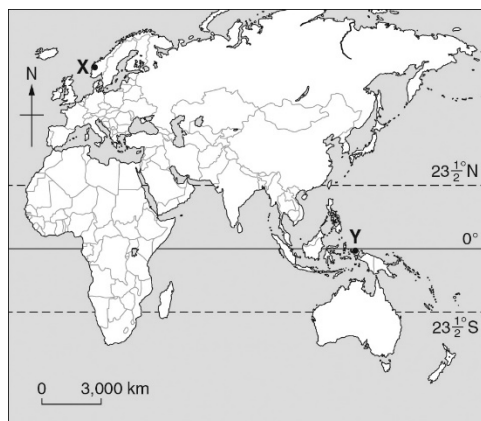
C. (2) and (3) only

D. (1), (2) and (3)

8. Which of the following figures shows the correct trunk to root ratio of trees in tropical rainforests?



9. Refer to the map below. Which of the following comparisons about the effects of climate change between places X and Y are correct?



	Place X	Place Y
(1)	Increase in food production due to longer growing season	Decrease in food production due to more active pests
(2)	Higher frequency of flooding	Higher frequency of tropical cyclones
(3)	Lower heating costs in winter	Lower cooling costs in summer

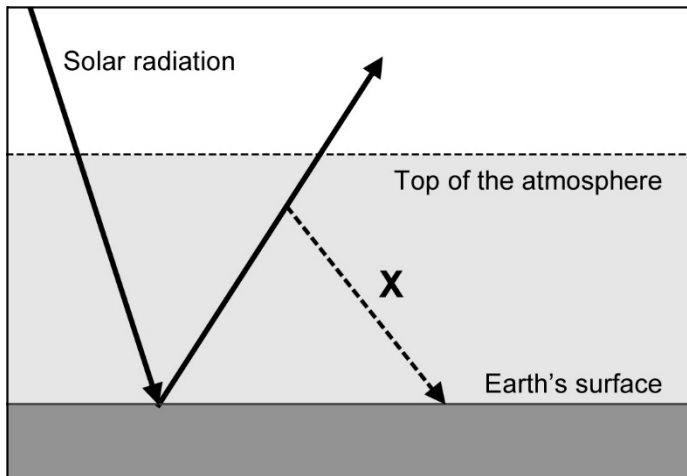
- A. (1) and (2) only
 B. (1) and (3) only
 C. (2) and (3) only
 D. (1), (2) and (3)

10. Which of the following are the measures implemented by governments in response to global warming?

- (1) Encourage citizens using high-energy efficient electronic appliances
 (2) Invest money in the development of solar energy and hydro-power
 (3) Participate in carbon offset projects
 (4) Give priority to railways in transport planning

- A. (1) and (3) only
 B. (2) and (4) only
 C. (1), (2) and (4) only
 D. (1), (2), (3) and (4)

11. The figure below shows the processes of greenhouse effect. Which of the following descriptions about X are correct?



- (1) It is a long wave radiation.
 - (2) It is the major source of energy heating the atmosphere.
 - (3) It is the process of the earth's surface reflecting solar radiation back to space.
 - (4) Heat energy would be absorbed by greenhouse gases during the process.
- A. (1) and (2) only
B. (3) and (4) only
C. (1), (2) and (4) only
D. (2), (3) and (4) only

12. Which of the following greenhouse gases is **not** come from natural environment?

- A. Carbon dioxide
B. CFCs
C. Ozone
D. Methane

II. Data-based Questions (36 marks)

Attempt all questions.

- Figure 1a shows the locations of places A, B and C in China. Figure 1b shows two climatic graphs. Figure 1c is a set of photos showing the change in environment in place B in a century.

Figure 1a

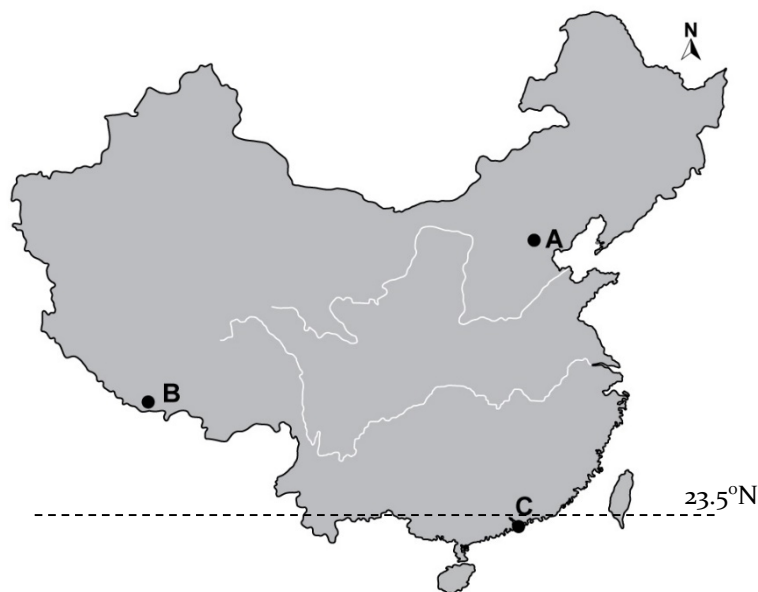


Figure 1b

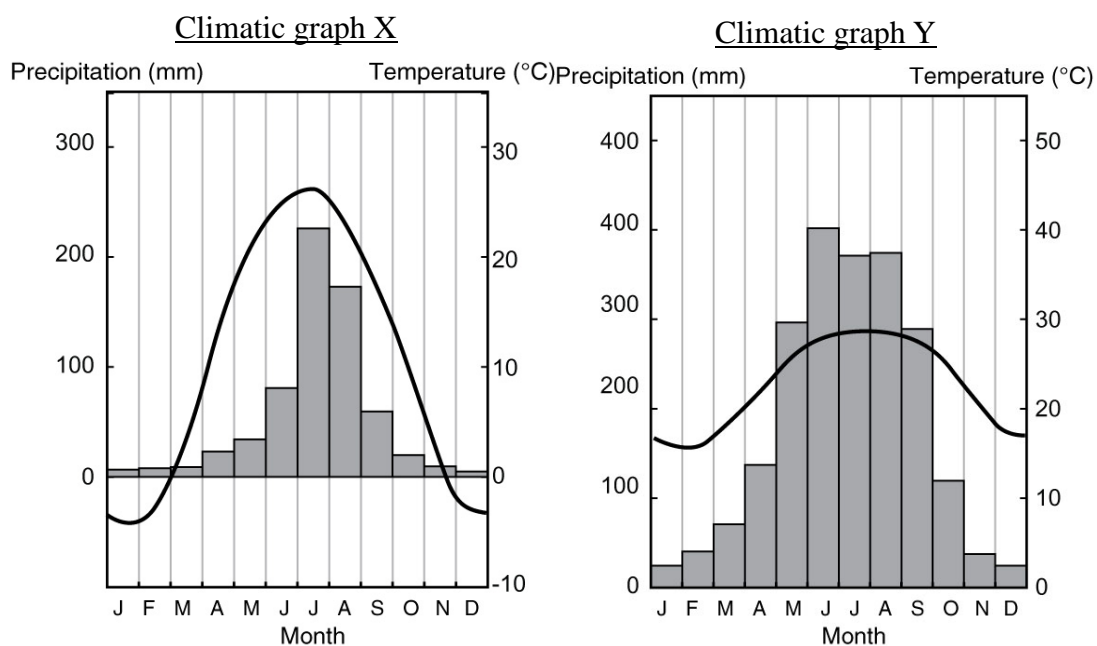


Figure 1c



(a) Refer to Figures 1a and 1b.

- (i) Match places A and C with climatic graphs X and Y in Figure 1b. (2 marks)
- (ii) Compare the climatic characteristics of places A and C. (6 marks)

(b) Refer to Figure 1c.

- (i) Contrast the photos taken in 1921 and 2009. (2 marks)
- (ii) Identify the phenomenon that might be responsible for such a change. (1 mark)
- (iii) Suggest how the changes stated in question (b)(i) further aggravate the phenomenon mentioned in question (b)(ii). (3 marks)

(c) *“The impacts caused by the phenomenon stated in question (b)(ii) are possibly more serious in place C than those in place A.”*
Justify this statement. (4 marks)

2. Figure 2a shows the soil profile of oxisol in tropical rainforests. Figure 2b shows a human activity found in tropical rainforests.

Figure 2a

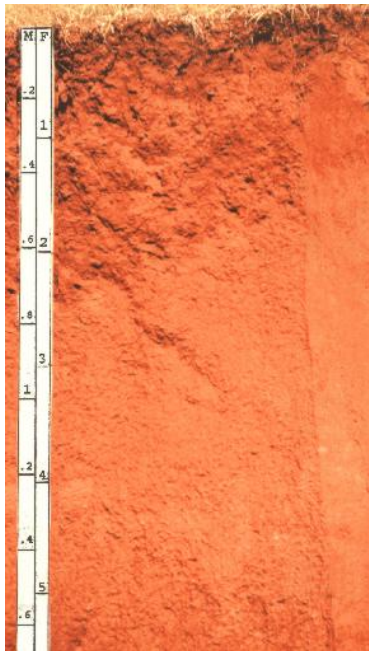


Figure 2b



- (a) With evidence from Figure 2a, describe and explain *two* characteristics of oxisol. (4 marks)
- (b) Is oxisol good for agricultural activities? Explain your answer. (3 marks)
- (c) Explain how the human activity shown in Figure 2b affects the soil nutrient in short-term and long-term respectively. (5 marks)
- (d) Draw the trophic pyramids before and after deforestation. (6 marks)

III. Short Essay (12 marks)

1. Describe the human activities that have intensified the greenhouse effect in the past 100 years. Why is international cooperation not successful in fighting against global warming? (12 marks)

-- End of Question Paper --